**Claims**

1. A communication system for appointing a frequency assignment (FA) mode and/or a broadcast/multicast service (BCMCS) assignment ratio in a 1xEV-DO system in order to provide a BCMCS, the communication system comprising:

at least one access terminal (AT) for receiving a 1xEV-DO service or the BCMCS through the 1xEV-DO system;

a base station manager (BSM) for receiving BCMCS control information containing the FA mode and/or the BCMCS assignment ratio and transmitting a received BCMCS control information to a 1xEV-DO access network controller (ANC); and

an access network including a 1xEV-DO access network transceiver subsystem (ANTS) and the 1xEV-DO access network controller for temporarily storing the received BCMCS control information and controlling a kind and/or a ratio of a message, the message being transmitted to each access terminal, according to the FA mode and/or the BCMCS assignment ratio contained in the BCMCS control information.

2. The communication system as claimed in claim 1, wherein the appointment of the FA mode is a work appointing a specific 1xEV-DO FA for the BCMCS from among 1xEV-DO FAs used for the 1xEV-DO service according to each access network area in the 1xEV-DO system.

3. The communication system as claimed in claim 2, wherein the FA mode includes a dedicated BCMCS mode using the specific 1xEV-DO FA for the BCMCS and a mixed BCMCS mode using the specific 1xEV-DO FA to provide the BCMCS and the 1xEV-DO service.

4. The communication system as claimed in claim 1 or 3, wherein the BCMCS assignment ratio is inputted when the FA mode is the mixed BCMCS mode.

5. The communication system as claimed in claim 1, wherein the FA mode and/or the BCMCS assignment ratio is contained in a system parameter message for the BCMCS in the 1xEV-DO system and then transmitted.

6. The communication system as claimed in claim 1 or 5, wherein the base station manager stores a BCMCS control program performing a function of inputting the BCMCS control information, determining whether the inputted BCMCS control information is correct information or not, inserting the BCMCS control information into the system parameter message, and transmitting the system parameter message to the access network.

7. The communication system as claimed in claim 1,

wherein the access network includes a base station controller (BSC) and a base station transceiver subsystem (BTS).

8. The communication system as claimed in claim 1, wherein the 1xEV-DO system further comprises a general ATM switch network (GAN), which is connected to the 1xEV-DO access network controller and performs a routing function for transmitted/received packet data regarding the 1xEV-DO service and/or the BCMCS.

9. The communication system as claimed in claim 1 or 8, wherein the 1xEV-DO system further comprises a packet data serving node (PDSN), which is connected to the GAN and performs a function of transmitting the packet data to said each access terminal through the GAN.

10. The communication system as claimed in claim 1 or 9, wherein the 1xEV-DO system further comprises an authorization authentication accounting (AAA), which is connected to the GAN and the packet data serving node and performs a subscriber authentication when an authenticated access terminal requests a packet data service, encodes the packet data by means of an encoding key in order to transmit the packet data through the packet data serving node, and collects accounting data.

11. The communication system as claimed in claim 1 or 8, wherein the 1xEV-DO system further comprises a data location register, which is connected to the 1xEV-DO access network controller through the GAN by means of a transmission control protocol/Internet protocol (TCP/IP) and manages position information and paging zone of said each access terminal, supports mobility of each access terminal, and controls a session.

12. The communication system as claimed in claim 10, wherein the 1xEV-DO system further comprises a BCMCS controller for providing and managing session information of said each access terminal, receiving subscriber profile information from the authorization authentication accounting, and assigning service authority to said each access terminal.

13. The communication system as claimed in claim 12, wherein the 1xEV-DO system further comprises a BCMCS contents server for receiving at least one BCMCS contents from at least one BCMCS contents provider, encoding the received BCMCS contents, and storing the encoded BCMCS contents.

14. The communication system as claimed in claim 13, wherein the BCMCS contents server converts the encoded BCMCS

contents into an IP-based multicast stream and transmits the IP-based multicast stream to the packet data serving node by means of a multicast transmission technology.

15. The communication system as claimed in claim 13, wherein the 1xEV-DO system further comprises at least one BCMCS contents providing server for transmitting the BCMCS contents to the BCMCS contents server by means of a bearer service.

16. A method for appointing an FA mode and/or a BCMCS assignment ratio in a 1xEV-DO system including at least one access terminal (AT), an access network (AN) and a base station manager (BSM), the access network including a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to provide a 1xEV-DO service and/or a broadcast/multicast service (BCMCS) to each access terminal and the 1xEV-DO access network controller (ANC), the method comprising the steps of:

a) inputting BCMCS control information containing FA mode information and/or BCMCS assignment ratio information and determining whether the information is normal input information or not;

b) operating a timer and simultaneously transmitting the BCMCS control information to the access network;

c) determining whether a predetermined check time is ended or not and checking whether a response signal is received from the access network or not; and

d) outputting an error message and/or a re-input screen of the BCMCS control information when the response signal is not received in the predetermined check time.

17. The method as claimed in claim 16, wherein, in step a), the FA mode information is information on one of a dedicated BCMCS mode and a mixed BCMCS mode.

18. The method as claimed in claim 17, wherein the BCMCS assignment ratio information is also inputted when the mixed BCMCS mode is inputted.

19. The method as claimed in claim 16, wherein, when the inputted BCMCS control information is not the normal input information in step a), the base station manager outputs an error message and/or a re-input screen of the BCMCS control information.

20. The method as claimed in claim 16, wherein, in step b), the BCMCS control information is contained in a system parameter message for the BCMCS and then transmitted.

21. The method as claimed in claim 16, wherein, in

step c), the predetermined check time is a period of time from a time point at which the timer operates to a time point at which the base station manager halts an operation checking whether the response signal is received from the access network or not.

22. The method as claimed in claim 16, wherein the base station manager operates the timer in step b) and simultaneously starts a count, increases a number of times of the count by one time whenever the predetermined check time is ended, and resets the timer.

23. The method as claimed in claim 22, wherein the base station manager repeats the operation checking whether the response signal is received from the access network or not by a predetermined number of times of a count, and outputs an error message and/or a re-input screen of the BCMCS control information when the response signal is not received during a specific period of time required to reach the predetermined number of times of the count.

24. The method as claimed in claim 16, wherein, when the response signal is received in step d), the base station manager outputs a success message reporting successful reception of the BCMCS control information to the access network.

25. A method for controlling a message according to a broadcast/multicast service (BCMCS) dedicated mode set in a 1xEV-DO system including at least one access terminal (AT), an access network (AN) and a base station manager (BSM), the access network including a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to provide a 1xEV-DO service and/or a BCMCS to each access terminal and the 1xEV-DO access network controller (ANC), the method comprising the steps of:

a) receiving an overhead message transmitted from the access network;

b) confirming a CDMA channel list contained in the overhead message, selecting a frequency assignment (FA) and becoming tuned to the frequency assignment;

c) determining whether an frequency assignment to which the access terminal is tuned is a BCMCS FA or not when the BCMCS is requested; and

d) shifting to the BCMCS FA and receiving the BCMCS FA in a state in which the access terminal is not tuned to the BCMCS FA.

26. The method as claimed in claim 25, wherein the 1xEV-DO access network transceiver subsystem and the 1xEV-DO access network controller receive information on the

dedicated BCMCS mode from the base station manager in advance and store the information.

27. The method as claimed in claim 25, wherein, in step a), the overhead message includes at least one message of a Quick_Config message, a Sector_Parameter message, a System_ Parameter message, a Neighbor List message and an Access Parameter message.

28. The method as claimed in claim 25 or 27, wherein the Sector_Parameter message includes information on the CDMA channel list.

29. The method as claimed in claim 25, wherein, in step b), the CDMA channel list includes information on two or more CDMA frequency assignments.

30. The method as claimed in claim 25, wherein, in step c), the access terminal generates a 1xEV-DO service request signal and transmits the 1xEV-DO service request signal to the 1xEV-DO access network transceiver subsystem and the 1xEV-DO access network controller, when the 1xEV-DO service is requested.

31. The method as claimed in claim 30, wherein the 1xEV-DO access network controller receiving the 1xEV-DO

service request signal determines whether the access terminal is tuned to a 1xEV-DO FA or the BCMCS FA.

32. The method as claimed in claim 31, wherein the 1xEV-DO access network controller generates a redirection message or a traffic channel assignment message and transmits the redirection message or the traffic channel assignment message to the access terminal, when it is determined that the access terminal is tuned to the BCMCS FA.

33. The method as claimed in claim 32, wherein the access terminal having received the redirection message or the traffic channel assignment message shifts to the 1xEV-DO FA contained in the redirection message or the traffic channel assignment message, and receives the 1xEV-DO service.

34. The method as claimed in claim 25, wherein the access terminal determines whether the access terminal is tuned to a 1xEV-DO FA or the BCMCS FA when the BCMCS is requested, and performs an operation of shifting to the BCMCS FA when the access terminal is in a state of being tuned to the 1xEV-DO FA.

35. The method as claimed in claim 34, wherein the access terminal stores information on the BCMCS FA and performs a shift operation to the BCMCS FA while changing a

frequency for searching and confirming the stored information on the BCMCS FA.

36. A method for controlling a message according to a broadcast/multicast service (BCMCS) dedicated mode set in a 1xEV-DO system including at least one access terminal (AT), an access network (AN) and a base station manager (BSM), the access network including a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to provide a 1xEV-DO service and/or a BCMCS to each access terminal and the 1xEV-DO access network controller (ANC), the method comprising the steps of:

a) receiving an overhead message transmitted from the access network;

b) confirming a CDMA channel list contained in the overhead message, selects a frequency assignment (FA) and tuning to the frequency assignment;

c) checking a stored BCMCS FA when the BCMCS is requested; and

d) shifting to the checked BCMCS FA and receiving the BCMCS FA.

37. The method as claimed in claim 36, wherein the 1xEV-DO access network transceiver subsystem and the 1xEV-DO access network controller receive information on the

dedicated BCMCS mode from the base station manager in advance and store the information.

38. The method as claimed in claim 36, wherein the CDMA channel list is recorded in a Sector_Parameter message of the overhead message.

39. The method as claimed in claim 38, wherein the CDMA channel list records information on at least one 1xEV-DO FA and said each access terminal is tuned to a specific 1xEV-DO FA.

40. The method as claimed in claim 36, wherein, in step c), the access terminal generates a 1xEV-DO service request signal and transmits the 1xEV-DO service request signal to the 1xEV-DO access network transceiver subsystem and the 1xEV-DO access network controller, when the 1xEV-DO service is requested.

41. The method as claimed in claim 40, wherein the 1xEV-DO access network controller having received the 1xEV-DO service request signal generates a redirection message or a traffic channel assignment message and transmits the redirection message or the traffic channel assignment message to the access terminal.

42. A method for controlling a message according to a broadcast/multicast service (BCMCS) mixed mode set in a 1xEV-DO system including at least one access terminal (AT), an access network (AN) and a base station manager (BSM), the access network including a 1xEV-DO access network transceiver subsystem (ANTS) for transmitting packet data and various messages in order to provide a 1xEV-DO service and/or a BCMCS to each access terminal and the 1xEV-DO access network controller (ANC), the method comprising the steps of:

the 1xEV-DO access network controller receiving mixed BCMCS mode information and BCMCS assignment ratio information from the base station manager and storing the received information;

controlling a sort and/or a ratio of the message according to the BCMCS assignment ratio information and transmitting the sort and/or the ratio of the message to said each access terminal;

periodically checking a ratio of a 1xEV-DO message and determining whether or not the ratio of the 1xEV-DO message exceeds a 1xEV-DO message appointment ratio;

selecting at least one shift-targeted access terminal and a specific 1xEV-DO FA according to an exceeding ratio; and

transmitting information on the specific 1xEV-DO FA to each shift-targeted access terminal.

43. The method as claimed in claim 42, wherein the BCMCS assignment ratio information contains ratio information for using a BCMCS FA resource, which is appointed for the BCMCS, in the BCMCS.

44. The method as claimed in claim 42 or 43, wherein the 1xEV-DO message appointment ratio is a ratio obtained by subtracting the BCMCS assignment ratio from an entire ratio of the BCMCS FA resource.

45. The method as claimed in claim 42, wherein the information on the specific 1xEV-DO FA is recorded in a redirection message or a traffic channel assignment message and then transmitted to said each shift-targeted access terminal.

46. The method as claimed in claim 45, wherein said each shift-targeted access terminal having received the redirection message or the traffic channel assignment message shifts to the specific 1xEV-DO FA and receives the 1xEV-DO service.